

Should we be concerned about fracking?

Fracking, or more correctly 'hydraulic fracturing' is the technique used to exploit natural gas from shale rock. Fracking involves high-pressure injection of water containing small amounts of sand and chemicals into horizontally drilled boreholes to fracture the rock.

The fractures are held open by the sand, allowing methane contained in the rock to flow to surface via conventional gas production wells. Fracking has gained significant, but not always positive, media coverage following the rapid development of the shale gas industry in the United States. One particular topic of concern is whether fracking could present a risk to human health through contamination of groundwater and drinking water supplies.

Images of 'taps on fire' make easy headlines and large groundwater abstractors in the UK are quite rightly concerned about the potential impacts fracking could have on them, if the industry gains momentum in the UK.

Pollution

Whilst there have been some cases in the US where fracking may have given rise to pollution of groundwater, these are very specific cases related to largely unregulated developments and the implementation of thoroughly inadequate (or no) proper well construction techniques.

Disappointingly for those who like a good headline, the possibility of these events happening in the UK is essentially none. The key reasons for this are:

- The onshore gas industry is regulated by the Environment Agency, who will only issue licences and permits once they are satisfied any potential risks to the environment have been properly considered and adequately addressed.
- Target shale gas reserves in the UK are deep (over 1.5km or more), which means there is no chance of hydraulic connection between the reserves and useful groundwater used for drinking water, which found at much shallower depth (less than 400m).
- The only realistic chance of pollution to groundwater is through well casing failure. In recognition of the severity of the potential impacts a well casing failure could have, the design and construction of shale gas wells is carefully regulated by the HSE and the Offshore Installations and Wells Regulations (also applicable to onshore operations), making the risk of failure essentially zero.

The residual risks posed to groundwater and groundwater abstractors from shale gas in the UK are therefore negligible. That is not to say there is absolutely no risk, but that the risks are very low, well understood and can be adequately mitigated.

Far greater risks exist to water abstractors than deep shale gas developments. These

include new or increased abstractions close to existing sources or activities close to existing sources that could impact groundwater quality.

If you're abstracting water and concerned

that you may be at risk from developments or activities near to you, call Envireau Water for a free consultation.

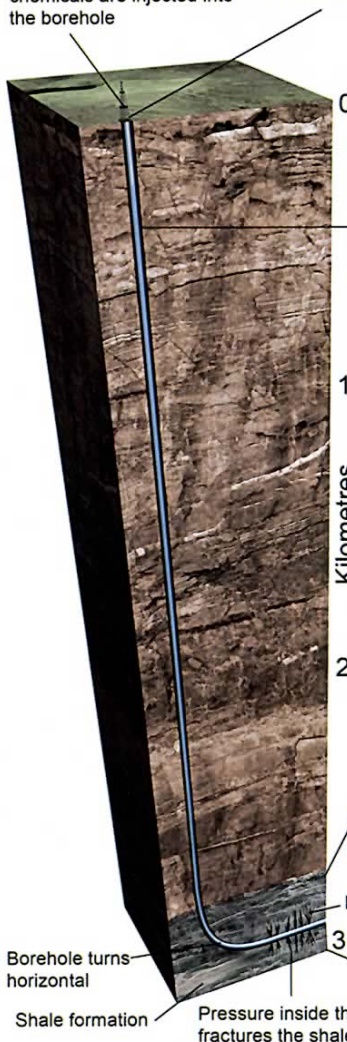
Phil Ham, Envireau Water



Exploratory drilling at a site in the UK.

A mix of sand, water and chemicals are injected into the borehole

Recovered water is taken to a treatment plant



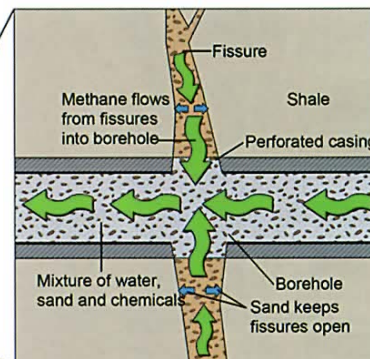
Hydraulic fracturing or 'fracking' involves the injection of water, sand and chemicals at high pressure into boreholes.

Image courtesy of the British Geological Survey

Methane flows out of borehole and is used to generate electricity or fed into the gas grid

Hydraulic Fracturing

Hydraulic fracturing or 'fracking', involves the injection of water, sand and chemicals at high pressure into horizontally drilled boreholes. The pressurised mixture causes the shale to crack. These fissures are held open by the sand particles so that methane from the shale can flow up the borehole.



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